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APPEAL BRIEF TRANSMITTAL LETTER (Large Entity) Applicants: George E. Richards et al.	Docket No. 1925A1

Application No.	Filing Date	Examiner	Group Art Unit
10/809,764	March 25, 2004	J.M. Wollschlager	1732

Invention:

PROCESS FOR MANUFACTURING POWDER COATING COMPOSITIONS INTRODUCING HARD TO INCORPORATE ADDITIVES AND/OR PROVIDING DYNAMIC COLOR CONTROL

TO THE COMMISSIONER FOR PATENTS:

Transmitted herewith is an Appellants' Brief Under 37 C.F.R. §41.37 in the above-identified application.

The fee has been calculated and is transmitted as shown below.

CLAIMS AS AMENDED

	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST # PREV. PAID FOR	NUMBER EXTRA CLAIMS PRESENT	RATE	ADDITIONAL FEE
TOTAL CLAIMS	21	24 =	0	X $ 50.00	$000.00
INDEP. CLAIMS	3	3 =	0	X $200.00	$000.00
Multiple Dependent Claims (check if applicable) ☐					$ 0.00
TOTAL ADDITIONAL FEE FOR THIS AMENDMENT					$000.00

☒ No additional fee is required for amendment.

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- ☒ Any patent application processing fees under 37 C.F.R. 1.17.

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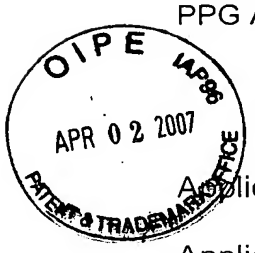
Florence P. Trevethan
(Name of Person Depositing Mail)

Florence P. Trevethan
Signature

03/30/2007
Date

Response Under 37 CFR §41.37
Application No. 10/809,764
In Support of Notice of Appeal Dated February 1, 2007
Paper Dated: March 30, 2007
Attorney Docket No. 3152-063904
PPG Attorney Docket No. 1925A1



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application No.	:	10/809,764			
Applicants	:	George E. Richards et al.			
Filed	:	March 25, 2004			
Title	:	Process for Manufacturing Powder Coating Compositions Introducing Hard to Incorporate Additives and/or Providing Dynamic Color Control			
Group Art Unit	:	1732	Confirmation No.	:	7933
Examiner	:	J.M. Wollschlager	Customer No.	:	24959

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APPELLANTS' BRIEF UNDER 37 C.F.R. §41.37

Sir:

This Appeal Brief is submitted in support of the Notice of Appeal filed February 1, 2007.

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Florence P. Trevethan 03/30/2007
Signature Date

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The headings used hereinafter and the subject matter set forth under each heading are in accordance with 37 C.F.R. §41.37(c)(1).

I. REAL PARTY IN INTEREST

The real party in interest in this Appeal is PPG Industries Ohio, Inc. having acquired rights by way of an Assignment executed on August 9, 2004, and recorded in the United States Patent and Trademark Office at Reel 015958, Frame 0001, on November 8, 2004.

II. RELATED APPEALS AND INTERFERENCES

As the legal representative of Appellants, the undersigned has no knowledge of any appeals and interferences directly related to this Appeal.

III. STATUS OF CLAIMS

Claims 1-24 are currently pending in this application. Claims 12, 16 and 20 have been withdrawn from consideration. Remaining claims 1-11, 13-15, 17-19 and 21-24 are appealed in this application.

Pursuant to a final Office Action dated November 2, 2006, claims 1-11, 13-15, 17-19 and 21-24 have been rejected over prior art cited in the application.

IV. STATUS OF AMENDMENTS

An Amendment After Final Rejection was submitted on February 1, 2007. This Amendment was entered as indicated in the Advisory Action dated February 22, 2007. A copy of the claims involved in this Appeal are contained in the Appendix attached hereto.

V. SUMMARY OF CLAIMED SUBJECT MATTER

In one embodiment of the invention set forth in claim 1, Appellants have developed a process for manufacturing thermosetting powder coating compositions comprising:

(A) feeding a base material comprising as dry ingredients, a resin and a curing agent to an extruder from an initial position;

(B) adding at least one hard to incorporate additive to the base material after the base material enters the extruder and before it exits the extruder; and

(C) passing the combined base material and hard to incorporate additive(s) through at least a portion of the extruder to form a thermosetting powder coating composition.

See page 3, lines 13-15 and page 3, line 26 through page 4, line 5 of the specification.

In another embodiment set forth in claim 13, Appellants have developed a process for manufacturing thermosetting powder coating compositions comprising:

(A) feeding a base material comprising as dry ingredients, a resin and a curing agent to an extruder from an initial position;

(B) adding at least one hyperdispersed pigment to the base material; and

(C) passing the combined base material and hyperdispersed pigment(s) through at least a portion of the extruder to form a thermosetting powder coating composition,

wherein the hyperdispersed pigment(s) in step (B) are added either separately from the base material or with the base materials, and when added with the base material, the hyperdispersed pigment(s) are in the form of a dried liquid pigment dispersion that has been formed from a liquid pigment dispersion comprising greater than 5 weight percent organic solvent.

See page 3, lines 13-15 and page 3, line 26 through page 4, line 5 and page 4, lines 13-17 of the specification.

In another embodiment set forth in claim 17, Appellants have developed a process for dynamic color control in a thermosetting powder coating extrusion process comprising the steps of:

(A) determining an amount of hyperdispersed pigment(s) to be added to base material comprising as dry ingredients, a resin and a curing agent introduced to an extruder to form a thermosetting powder of a desired color;

(B) adding the determined amount of hyperdispersed pigment(s) to the base material;

(C) monitoring the output of the extruder for accuracy of the color of the thermosetting powder coating; and

(D) dynamically adjusting, as necessary, the amount of pigment(s) added at step (B) based upon the monitored output;

wherein the base material travels through a portion of the extruder before the addition of pigment(s) in step (B), or the pigment(s) added in step (B) are added to the extruder at the same location as the base material, or the pigment(s) added to step (B) are added to the extruder with the base material, and when added to the extruder with the base material, the pigment(s) are in the form of a dried liquid pigment dispersion formed from a liquid dispersion comprising greater than 5 weight percent organic solvent.

See page 3, lines 13-15 and page 3, line 26 through page 4, line 5, page 4, lines 13-17 and page 6, lines 11-15 of the specification.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. Are claims 1-10 anticipated by U.S. Patent No. 4,057,607 to Soehngen et al. under 35 U.S.C. §102(b)?

2. Is claim 2 obvious over the Soehngen patent in view of U.S. Patent No. 4,973,439 to Chang et al. under 35 U.S.C. §103(a)?

3. Is claim 11 obvious over the Soehngen patent under 35 U.S.C. §103(a)?

4. Are claims 8, 13-15, 21 and 22 obvious over the Soehngen patent in view of U.S. Patent No. 5,856,508 to Jaffe et al. under 35 U.S.C. §103(a)?

5. Is claim 14 obvious over the combined teachings of the Soehngen, Jaffe and Chang patents under 35 U.S.C. §103(a)?

6. Are claims 17-19, 23 and 24 obvious over the combined teachings of the Soehngen, Jaffe and Chang patents under 35 U.S.C. §103(a)?

VII. ARGUMENT

The present invention is directed to a process for extruding thermosetting powder coating compositions that contain additives that are "hard to incorporate" into a base material that includes resin and a curing agent. These "hard

to incorporate" additives are those that are not readily dispersed during the extrusion process. Examples thereof include pigments, flow additives and components having a melting point higher than the (average) melting point of the resin used in the base material.

In addition, the present invention is directed to a method of producing thermosetting powder coating compositions that include monitoring the output of the extruder and dynamically adjusting the amount of the hard to incorporate additive that is added to the extruder as needed to dynamically control the manufactured thermosetting powder coating based on the monitor output.

Neither of these features (controlling the location at which hard to incorporate additives are added to the base material in an extruder or dynamic control of the output of an extruder of the amount of the hard to incorporate additives) are taught or suggested by the prior art of record.

A. The Soehngen patent does not relate to combining hard to incorporate additives into a resinous base material.

Claim 1 recites a step (B) of "adding at least one hard to incorporate additive" to the base material of a thermosetting powder coating composition fed to an extruder "after the base material enters the extruder and before it exits the extruder". Step (C) of claim 1 recites "passing the combined base material and hard to incorporate additive(s) through at least a portion of the extruder". These steps are not found in the Soehngen patent. Anticipation of a claim by a reference requires that each limitation of the claims be expressly or inherently disclosed by the reference. *Perricone v. Medicis Pharm. Corp.*, 432 F.3d 1368, 1376, 77 USPQ2d 1321, 1325 (Fed. Cir. 2005).

In rejecting claims 1-10 for anticipation by the Soehngen patent, the Examiner asserts that the claimed "hard to incorporate" additive is met by the aluminum flake that is added to resin powders in the Soehngen patent. This reliance upon the disclosure of mixing aluminum flake into a resinous powder in the Soehngen patent is misplaced. Aluminum flake is not a "hard to incorporate additive" as defined in the present application.

In particular, the Soehngen patent discloses a process for preparing a resin powder that contains shear degradable particles, such as aluminum flake. These particles can be damaged during a melt extrusion process. The Soehngen process is designed to overcome this problem of degradation of flake particles during production of a powder coating composition. According to the Soehngen patent, a first composition containing resin and a curing agent is extruded through a melt-screw extruder 6 and a second composition that contains the shear degradable particles, such as metal flake, is added via line 5 to the stream of resin that has exited the melt-screw extruder, so that the metal flake is not subjected to the shear that occurs within the melt-screw extruder 6. The mixture is then further mixed in a non-shear mixer (static mixer 8).

The only consideration in Soehngen to adding material to a melt-screw extruder at a downstream portion thereof appears in Comparative Example in column 9 of the Soehngen patent. That Comparative Example showed the poor results of adding shear degradable particles to a melt-screw extruder at a downstream position. Significant degradation of aluminum flakes was reported even when they were added to the extruder at a downstream portion thereof.

The Examiner has equated the claimed "hard to incorporate additives" with the aluminum flake of the Soehngen patent that was added to an extruder at a downstream position in the Comparative Example. Appellants have defined "hard to incorporate additives" as "additives that are not readily dispersed during the extrusion process, including pigments, flow additives, and components having melting point higher than the melting point of the resin or average melting point of the resins, used in the base material". Page 3, lines 21-25. Thus, the hard to incorporate additives of the present invention are those that are not readily dispersed during the extrusion process. The aluminum flake of the Soehngen patent is readily dispersed during extrusion, as indicated by the term "shear degradable". The Soehngen patent itself supports this conclusion, where it describes aluminum flake mixed into the resin composition via a static mixer, a well known low shear mixer. No extraordinary measures are indicated as necessary to mix the aluminum flake

into the resin composition.

The Examiner appears to be unpersuaded by this argument, instead asserting that the definition of hard to incorporate additives includes all components that have a melting point higher than the melting point of the resin. The definition of hard to incorporate additives as those that are "not readily dispersed during the extrusion process" does not mean that all components that have a melting point higher than the melting point of the resin are included as hard to incorporate additives, just those that are not readily dispersed. Appellants have already clearly established on the record that aluminum flake and the like are not "hard to incorporate additives" of the present invention even though they melt at higher temperatures than the melting point of the resin. A hard to incorporate additive, as recited by claim 1 is one which is difficult to disperse during the extrusion process. A hard to incorporate additive is not necessarily a component having a melting point higher than the melting point of the resin. While claims are to be given their broadest reasonable interpretation consistent with the specification during examination thereof, the "claim language should be read in light of the specification as it would be interpreted by one of ordinary skill in the art". *In re American Academy of Science Tech Center*, 367 F.3d 1359, 1364, 70 USPQ2d 1827, 1830 (Fed. Cir. 2004). One skilled in the art recognizes that aluminum flake is not a material which is hard to incorporate in a resin composition. As noted above, the Soehngen patent itself shows that metal flake is not hard to incorporate into a resin composition. Particular examples of hard to incorporate additives include pigments and flow additives, per claims 6-8 and claim 9, respectively. In this instance, the specification indicates the particular definition given to "hard to incorporate additives" that is created by the Appellants and that definition should be used in examination of the claims. *Cook Biotech Inc. v. Acell, Inc.*, 460 F.3d 1365, 79 USPQ2d 1865 (Fed. Cir. 2006).

Appellants claim a process of controlling the point at which hard to incorporate additives are added to a base composition in an extruder. The Soehngen patent fails to teach or suggest combining hard to incorporate additives into a resinous base material in a downstream portion of an extruder. Accordingly,

claims 1-11 define thereover.

As to claim 2, the Examiner asserts that Soehngen discloses controlling the amount of additives employed in a continuous extrusion process, such as to produce a product of a desired color. Even if the Soehngen patent were considered to disclose a need to produce a particular color of powder (which it does not), there is no teaching or suggestion in the Soehngen patent to monitor the output of an extruder for the amount of hard to incorporate additive included therein, much less to dynamically adjust the amount of hard to incorporate additive that is added to an extruder based on the monitored output.

There is no monitoring of the output of the system disclosed in the Soehngen patent, and, thus, there is no teaching (or suggestion) to practice the process of claim 2.

As to claim 6, the Soehngen patent fails to teach or suggest incorporating pigments at a downstream position of an extruder. In the final Office Action, the Examiner asserts that Soehngen teaches "adding hard to incorporate additive (e.g., aluminum flake, pigment, flow additives) to the base material" at a downstream portion of the extruder at column 9, lines 20-36 and column 5, lines 20-56. Actually, the cited passage in column 9 only describes the poor results of adding aluminum flake at a downstream portion. Column 5 indicates that pigments may be added to the stream containing shear degradable particles (which is not extruded) or may be added to the stream of resin that passes through the extruder. Hence, Soehngen only teaches adding pigments at or near the inlet of the extruder (not at a downstream portion) or to a process line downstream of the extruder. The Examiner further asserts that the entire system shown in Soehngem is an "extruder" as claimed, because the patent describes the final mixture as "extruded through a 0.25 inch diameter orifice 15". The use of the term "extruded" to describe production of a stream that can pass through a pair of chill rolls for solidification does not convert the entire system to be an extruder as that term is known in the art and is used in the present application. The Soehngen patent itself only refers to mixer 6 as a "melt screw extruder". Extrusion of aluminum flake and molten powder through line 5 does

not mean that the piston 1 and line 5 are a true extruder as contemplated by the present claims. Accordingly, nowhere does the Soehngen patent teach or suggest adding pigments to the base material at a position after the base material enters an extruder and before it exits the extruder. The only teaching of adding any materials at a downstream portion thereof is in the Comparative Example discussed above, wherein aluminum flake is added to the melt-screw extruder at a downstream position. The Comparative Example, however, does not suggest adding a hard to incorporate additive that is a pigment at such a downstream position of an extruder.

As to claims 7 and 8, which recite that the pigment is dispersed in a liquid pigment dispersion, and that the pigment is dispersed in a dry liquid pigment dispersion, respectively, to the extent that the Soehngen patent includes broad disclosure of the addition of pigments into a powder coating composition, this does not overcome the basic failure of the Soehngen patent to teach or suggest the addition of a hard to incorporate additive that comprises a pigment at a downstream portion of an extruder. Therefore, claims 6-8 define thereover.

As to claim 9, which recites that the hard to incorporate additive comprises one or more flow additives, there is no disclosure at column 5 (or elsewhere) of Soehngen that flow additives should be added at a downstream portion of an extruder as claimed. The Soehngen patent only describes optional use of flow additives and is silent as to where and how they are added to the resin mixture. Considering that Soehngen does not teach or suggest adding pigment to a downstream portion of a true extruder, it also does not teach or suggest adding additives at such a location. Accordingly, claim 9 further defines over the Soehngen patent.

B. The Soehngen patent provides no motivation to provide dynamic control of the process.

Claim 2 depends from claim 1 and recites an additional step of monitoring the output from the extruder and dynamically adjusting the amount of hard to incorporate additives added to the extruder in step (B) to dynamically control the powder coating composition produced based upon the monitor output.

In rejecting claim 2 over the combined teachings of the Soehngen patent and the Chang patent, the Examiner acknowledges that Soehngen does not disclose a control mechanism, but asserts that the Chang patent details suitable process controls. This rejection is only proper if one of ordinary skill in the art would have been motivated to combine the prior art to achieve the claimed invention with a reasonable expectation of success. *Dystar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.* 464 F.3d 1356, 1365, 80 USPQ2d 1641, 1648 (Fed. Cir. 2006). This motivation to combine references may be found in the references themselves, in the knowledge of one of ordinary skill in the art or from the nature of the problem to be solved. *Dystar*, 464 F. 3d at 1365, 80 USPQ2d at 1649. The Examiner acknowledged that no consideration of control parameters is found in Soehngen, other than a desire to produce ("control") a certain color. The Chang patent is relied upon for teaching "an analogous method of process control".

Actually, the Chang patent describes a control system for a process for preparing toner particles, which are mixed into a composition in an extrusion device. The output of the device includes a sensing head having electrodes that measure the conductance and capacitance values of toner particles included therein. The amount of toner particles is controlled based on the output of the sensor head. Chang considers controlling the amount of toner added to a composition based on the composition's electrical properties. All that Soehngen discloses is that the shear degradable component "may also contain a pigment or dye if additional color is desired in the final powder particles". Col. 5, lines 20-23. The desirability of a color does not suggest controlling the color based on output of the final product. The Soehngen patent is not concerned with color of the final product, only that the shear-degradable particles are not damaged. As such, there is no motivation provided by Soehngen nor in the general knowledge related therein, nor in the nature of solving the problem of degrading particles to use Chang's system for controlling the amount of toner particles to control the output of Soehngen's device based on the amount of pigment added thereto. Accordingly, there is no motivation to combine the teachings of Soehngen and Chang, and claim 2 defines thereover.

C. The Soehngen patent does not suggest the subject matter of claim 11.

Claim 11 depends from claim 1 and is patentable over the Soehngen patent at least for all the same reasons that claim 1 is patentable thereover. Any motivation to practice the method of Soehngen via a particular injection process, does not account for the underlying failure of Soehngen to suggest addition of hard to incorporate additives at a downstream location of an extruder. Therefore, claim 11 defines thereover.

D. The Jaffe patent does not supplement the deficiency of the Soehngen patent to practice the method of claim 8.

Claim 8 depends from claim 1 and further recites that the hard to incorporate additive comprises pigments dispersed in a dried liquid pigment dispersion. To the extent that the Soehngen patent discloses the addition of pigments in a dried form anywhere in the system thereof, there is no teaching or suggestion in the Soehngen patent to incorporate pigments in a dried liquid pigment dispersion at a downstream portion of an extruder.

The Examiner has relied upon the Jaffe patent for teaching the use of pigments having a particle size in the range of 0.5 to 4.0 micron that are dried after production. The teachings of the Jaffe patent to utilize a pigment having a particular particle size do not cure the basic failure of the Soehngen patent to teach or suggest the addition of hard to incorporate additives at a downstream portion of an extruder. Accordingly, claim 8 defines over the combined teachings of the Soehngen and Jaffe patents.

E. The addition of hyperdispersed pigments to a resinous base material producing a powder coating composition is not taught or suggested by the prior art of record.

Claim 13 and dependent claims 14, 15, 21 and 22 are directed to a process of manufacturing thermosetting powder coating compositions in which a hyperdispersed pigment is added to a base material, where the hyperdispersed pigments are in the form of a dried liquid pigment dispersion formed from a liquid pigment dispersion comprising a greater than 5 wt.% organic solvent. While the

Soehngen patent discloses the addition of pigments generally to a powder coating composition in an extruder, nowhere does the Soehngen patent indicate anything other than conventional pigments should be used therein.

In order to account for the failure of the Soehngen patent to teach that the pigment is a hyperdispersed pigment, the Examiner has cited the Jaffe patent, which teaches a pigment having a particle size of 0.5 to 4.0 micron that is provided in a dried form after production in an organic solvent. Contrary to the assertions by the Examiner, the Appellants have not defined a hyperdispersed pigment in the present application as a pigment that mainly has an average particle size of 2.0 microns or less.

As defined in the specification, a hyperdispersed pigment is a pigment that has been subjected to additional grinding and/or dispersion steps that result in the pigments having an average particle size of 2.0 microns or less. Neither the Soehngen nor Jaffe patents contained any teaching or suggestion to include such hyperdispersed pigments. Accordingly, claims 13-15, 21 and 22 define thereover.

F. None of the cited references teach dynamic control of hard to incorporate additives, such as hyperdispersed pigments.

Claim 14 depends from claim 13 and further recites that the output from the extruder is monitored and the amount of hyperdispersed pigment added to the extruder in step (B) is dynamically adjusted to control the manufactured thermosetting powder coating based on the monitored output. Similarly, claims 17-19, 23 and 24 also require adding hyperdispersed pigment to a base material in an extruder and determining the amount of hyperdispersed pigment added to the extruder, along with dynamic monitoring of the output of the extruder for accuracy of the color of the thermosetting powder coating and dynamically adjusting the amount of pigment added based on the monitored output.

As detailed above, neither the Soehngen, Jaffe or Chang patents provide any motivation for modifying the teaching of the Soehngen patent to add hyperdispersed pigments to base material extruded from an extruder where the amount of pigments that exit the extruder is dynamically controlled. Accordingly,

claims 14, 17-19, 23 and 25 define over the combined teachings of the Soehngen, Jaffe and Chang patents.

VIII. CONCLUSION

Upon proper recognition that the Soehngen patent does not relate to the addition of hard to incorporate additives, such as hyperdispersed pigments, to a resin composition in an extruder, rejection of claims 1-11, 13-15, 17-19 and 21-24, all based on the Soehngen patent, should be withdrawn. Reversal of the final rejection and allowance of the pending claims is respectfully requested.

The Commissioner is authorized to charge any additional fees which may be required to Deposit Account No. 16-2025. Please refund any overpayments to Deposit Account No. 16-2025.

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CLAIM APPENDIX

1. A process for manufacturing thermosetting powder coating compositions, comprising:

A) feeding a base material comprising as dry ingredients, a resin and a curing agent to an extruder from an initial position;

B) adding at least one hard to incorporate additive to the base material after the base material enters the extruder and before it exits the extruder; and

C) passing the combined base material and hard to incorporate additive(s) through at least a portion of the extruder to form a thermosetting powder coating composition.

2. The process of Claim 1, further comprising the step of D) monitoring the output from the extruder and dynamically adjusting, as needed, the amount of hard to incorporate additive(s) added to the extruder in step B) to dynamically control the manufactured thermosetting powder coating based upon the monitored output.

3. The process of Claim 1, wherein the base material travels through a portion of the extruder before the addition of hard to incorporate additive(s) in step B).

4. The process of Claim 1, wherein the hard to incorporate additive(s) are introduced to the extruder at the initial position.

5. The process of Claim 1, wherein steps A-C) are repeated for different thermosetting powder coatings, and wherein the different thermosetting powder coatings utilize a common base material.

6 The process of Claim 1, wherein the hard to incorporate additive comprises pigment(s).

7. The process of Claim 1, wherein the hard to incorporate additive comprises pigment(s) dispersed in a liquid pigment dispersion.

8. The process of Claim 1, wherein the hard to incorporate additive comprises pigment(s) dispersed in a dried liquid pigment dispersion.

9. The process of Claim 1, wherein the hard to incorporate additive comprises one or more flow additives.

10. The process of Claim 1, wherein the addition of step B) is by injection.

11. The process of Claim 10, wherein the injection uses:

a low pressure vessel;

a source of pressurization coupled to the pressure vessel;

a mechanism for maintaining the pressure in the pressure vessel less than 100 psi;

a flow regulator; and

an injector outlet downstream of the flow regulator.

13. A process for manufacturing thermosetting powder coating compositions, comprising:

A) feeding a base material comprising as dry ingredients, a resin and a curing agent to an extruder from an initial position;

B) adding at least one hyperdispersed pigment to the base material; and

C) passing the combined base material and hyperdispersed pigment(s) through at least a portion of the extruder to form a thermosetting powder coating composition;

wherein the hyperdispersed pigment(s) in step B) are added either separately from the base material or with the base materials, and when added with the base material, the hyperdispersed pigment(s) are in the form of a dried liquid pigment dispersion that has been formed from a liquid pigment dispersion comprising greater than 5 weight percent organic solvent.

14. The process of Claim 13, further comprising the step of D) monitoring the output from the extruder and dynamically adjusting, as needed, the amount of hyperdispersed pigment(s) added to the extruder in step B) to dynamically control the manufactured thermosetting powder coating based upon the monitored output.

15. The process of Claim 13, wherein steps A-C) are repeated for different thermosetting powder coatings, and wherein the different thermosetting powder coatings utilize a common base material.

17. A process for dynamic color control in a thermosetting powder coating extrusion process, the color control process comprising the steps of:

A) determining an amount of hyperdispersed pigment(s) to be added to base material comprising as dry ingredients, a resin and a curing agent introduced to an extruder to form a thermosetting powder of a desired color;

B) adding the determined amount of hyperdispersed pigment(s) to the base material;

C) monitoring the output of the extruder for accuracy of the color of the thermosetting powder coating; and

D) dynamically adjusting, as necessary, the amount of pigment(s) added at step B) based upon the monitored output;

wherein the base material travels through a portion of the extruder before the addition of pigment(s) in step B), or the pigment(s) added in step B) are added to the extruder at the same location as the base material, or the pigment(s) added in step B) are added to the extruder with the base material, and when added to the extruder with the base material, the pigment(s) are in the form of a dried liquid pigment dispersion formed from a liquid dispersion comprising greater than 5 weight percent organic solvent.

18. The process of Claim 17, wherein steps A-D) are repeated for different thermosetting powder coatings having different colors and/or different formulations, and wherein the different thermosetting powder coatings utilize a common base material.

19. The process of Claim 17, wherein the pigment(s) are added in the form of a liquid pigment dispersion after the base material travels through a portion of the extruder or at the same location as the base material.

21. The process of Claim 13, wherein the addition of step B) is by injection.

22. The process of Claim 21, wherein the injection uses:

a low pressure vessel;

a source pressurization coupled to the pressure vessel;

a mechanism for maintaining the pressure in the pressure vessel less than 100 psi;

a flow regulator; and

an injector outlet downstream of the flow regulator.

23. The process of Claim 17, wherein the addition of step B) is by injection.

24. The process of Claim 23, wherein the injection uses:

a low pressure vessel;

a source of pressurization coupled to the pressure vessel;

a mechanism for maintaining the pressure in the pressure vessel less than 100 psi;

a flow regulator; and

an injector outlet downstream of the flow regulator.

EVIDENCE APPENDIX

None.

RELATED PROCEEDING APPENDIX

None.